METHOD AND SYSTEM FOR DETECTING RADIATION INCORPORATING A HARDENED PHOTOCATHODE

ABSTRACT OF THE DISCLOSURE

A method for detecting radiation is disclosed that includes forming a detector having a photocathode (22) with a protective layer (22c) of cesium, oxygen and fluorine; a microchannel plate (MCP) (24); and an electron receiver (26). Radiation is received at the photocathode (22). The photocathode (22) discharges electrons (34) in response to the received photons. Discharged electrons (34) are accelerated from the photocathode (22) to the input face (24a) of the microchannel plate (24). The electrons (34) are received at the input face (24a) of the microchannel plate (24). A cascade of secondary emission electrons (36) is generated in the microchannel plate (24) in response to the received electrons (34). The secondary emission electrons (36) are emitted from the output face (24b) of the microchannel plate (24). Secondary emission electrons (36) are received at the electron receiver (26). An output characteristic of the secondary emission electrons (36) is produced.